Remarks

The Office Action mailed December 2, 2004 and made final has been carefully reviewed and the foregoing amendment has been made in consequence thereof.

Claims 1-20 are now pending in this application, of which claims 1, 6. 8 and 13 have been amended. It is respectfully submitted that the pending claims define allowable subject matter.

The rejection of Claims 1-10, 12-16, and 18-20 under 35 U.S.C. § 102(b) as being anticipated by Guiterrez (U.S. Patent No. 6,585,540) is respectfully traversed.

Guiterrez et al. describe a multi-connector electronic assembly including a housing (202) having plug recesses (212) therein. The housing element includes a plurality of cavities (234) which receive component packages (232), (234). A shield substrate (260) is disposed on a bottom face of the housing and in one embodiment includes metallic shielding material (266) to shield the bottom of the connector assembly against electronic noise transmission. An external noise shield (272) may also be provided, and the shield (272) may be electrically coupled to the shielding material (266) and ultimately to ground. See Guiterrez et al. col. 9, lines 10-16.

As described by Guiterrez et al., the component packages (230), (232) are used to condition an electrical signal transmitted via the associated connector, and Guiterrez et al. define "condition" to include "signal voltage transformation, filtering, current limiting, sampling, processing, and time delay." See Guiterrez col. 13, lines 42-58. Of these, only the filtering condition is pertinent to the present invention which is directed to avoiding undesirable EMI/RFI. While the Final Office Action states that the "noise" referred to by Guiterrez et al. is electromagnetic in nature, Applicant notes that nowhere does Guiterrez et al. state that filtering is performed to address EMI/RFI issues. Additionally, Guiterrez et al. nowhere state that filtering is accomplished in incoming and outgoing signals.

Notably, the Guiterrez et al. device is not unlike the modular jack described in paragraph 4 of the present application. That is, the Guiterrez et al. device, at least in some embodiments, includes a jack having magnetic components within the jack and internal to a conductive shell surrounding the jack for filtering signal lines within the jack. As explained in paragraph 5 of the present application, this arrangement is believed to be problematic and may actually increase the susceptibility of the jack to EMI/RFI.

Amended claim 1 now recites a modular receptacle jack comprising: "a housing comprising a jack interface and an exterior surface," "a shield extending over at least a portion of said exterior surface, said shield comprising an interior face, an exterior face, signal conductors extending between said interior face and said exterior face, and a ground plane," and "a plurality of magnetic components coupled to one of said interior face and said exterior face, each of said magnetic components directly grounded to said ground plane of said shield, thereby avoiding common impedance coupling of said contacts and suppressing EMI/RFI in incoming and outgoing signals transmitted through the signal conductors of said shield."

Guiterrez et al. does not describe a shield having an interior face, an external face, and signal conductors extending therebetween. The Final Office Action cites Guiterrez et al.'s element (608) as corresponding to the recited conductors. Guiterrez et al., however, describe that elements (608) are circuit traces on a circuit board (606), and hence the elements (608) are not part of the shield substrate (260), which the Office Action cites as corresponding to the recited shield of claim 1. Rather, Guiterrez et al. describe that the substrate shield (260) includes terminal pin arrays (268) which receive terminals (220b) of the component packages (232, 232). The terminals (220b) are connected to the circuit traces (608) on the circuit board (606) when the connector assembly is installed to the board. As such, the substrate shield (260) does not include signal conductors as recited in claim 1, but rather only includes openings in the terminal pin arrays (268) that receive conductor terminals (220b) of the electronic packages (230), (232).

Also, the substrate shield (260) of Guiterrez et al. does not include a ground plane as recited in claim 1, and nowhere recites that the component packages (230), (232) are directly coupled to a ground plane of the shield. Rather, the component packages (230), (232) are connected to the circuit board (606), which presumably is connected to ground.

As described in the instant specification, and also as recited in claim 1, directly grounding the magnetic components to a ground plane of the shield avoids common impedance coupling of the connector contacts and suppresses EMI/RFI in incoming and outgoing signals transmitted through the signal conductors of the shield. Guiterrez et al. nowhere describe or suggest that common impedance coupling is problematic and is a contributing factor to EMI/RFI transmitted through the contacts. Furthermore, as described by Guiterrez et al., the shield substrate (260) is not capable of addressing such concerns.

Guiterrez et al. nowhere describe that the component packages (230). (232) suppress EMI/RFI in incoming and outgoing signals from the jack. Rather, Guiterrez describe the component packages as providing signal voltage transformation, filtering, current limiting, sampling, processing, and time delay, most of which are incompatible with bi-directional communication. As noted previously, Guiterrez et al. nowhere states, describes or suggests that filtering is performed to address EMI/RFI issues in incoming or outgoing signals. Guiterrez et al. only discusses noise issues only with respect to the shields (266) and (272).

Applicants note that the assertions in the Final Office Action that functional recitations are not entitled to patentable weight is contrary to controlling law. It is improper to disregard recitations of the claims, whether structural or functional. Under the proper legal standard, to anticipate a reference must teach *each and every* recitation of the claims, arranged as in the patented device. As Applicants have now demonstrated, Guiterrez et al. fail to describe the structure and function of the receptacle jack of claim 1.

For at least the reasons set forth above, Claim 1 is therefore submitted to be patentable over Guiterrez et al.

Claims 2-7 depend from claim 1, and when the recitations of claims 2-7 are considered in combination with the recitations of claim 1, claims 2-7 are likewise submitted to be patentable over Guiterrez et al.

Amended claim 8 recites a modular receptacle jack, comprising "a housing comprising a jack receptacle and a plurality of signal contacts within said receptacle," and "a shield extending over an outer surface of said housing, said shield comprising a printed circuit board having a ground plane and a plurality of magnetic components coupled to a surface of said printed circuit board and directly grounded to said ground plane, wherein EMI transmission is suppressed as signals pass from the signal contacts within the housing to an external space and as signals pass from the external space to the signal contacts."

Guiterrez et al., for the reasons set forth above, neither describe nor suggest a shield including a circuit board having a ground plane, and magnetic components directly grounded to the ground plane. Rather, as noted above, conductor terminals of the Guiterrez et al. component packages (230), (232) are passed through the substrate shield (260) and, instead of being grounded to the shield, are electrically connected to traces (608) on a circuit board (606) that is presumably connected to ground. Also, the Guiterrez et al. connector is not believed to be capable of suppressing EMI transmission as signals pass from the signal contacts within the housing to an external space and as signals pass from the external space to the signal contacts as recited in claim 1. Rather, Guiterrez et al. indicate that the component packages are provided for other purposes. Nowhere does Guiterrez et al. describe or suggest that the component packages are provided for EMI shielding purposes, or that the component packages are capable of bi-directional EMI suppression as claim 8 recites.

Claim 8 is therefore submitted to be patentable over Guiterrez et al.

Claims 9, 10 and 12 depend from claim 8, and when the recitations of claims 9, 10 and 12 are considered in combination with the recitations of claim 8, claims 9, 10 and 12 are likewise submitted to be patentable over Guiterrez et al.

Amended claim 13 recites a modular receptacle jack comprising "a housing comprising a jack receptacle and a plurality of signal contacts within said receptacle," and "a shield extending over an outer surface of said housing, said shield comprising a circuit board having at least one aperture therethrough for passage of a signal conductor, and at least one magnetic component coupled to a surface of said printed circuit board adjacent said aperture, said shield further comprising a ground plane and said at least one magnetic component directly connected to said ground plane for suppressing EMI transmission therethrough, thereby providing clean bi-directional communication through said signal contacts while avoiding common impedance coupling of said signal contacts."

Guiterrez et al., for the reasons set forth above, neither describe nor suggests a shield comprising a ground plane and said at least one magnetic component directly connected to said ground plane for suppressing EMI transmission therethrough, thereby providing clean bi-directional communication through said signal contacts while avoiding common impedance coupling of said signal contacts in the modular jack as recited in claim 13.

Claim 13 is therefore submitted to be patentable over Guiterrez et al.

Claims 16 and 18-20 depend from claim 13, and when the recitations of claims 16 and 18-20 are considered in combination with the recitations of claim 13, claims 16 and 18-20 are likewise submitted to be patentable over Guiterrez et al.

For the reasons set forth above, Applicants respectfully request that the Section 102 rejection of Claims 1-10, 12-16, and 18-20 be withdrawn.

The rejection of Claims 11 and 17 under 35 U.S.C. § 103 as being unpatentable over Guiterrez et al. in view of Belopolsky et al. (U.S. Patent No. 6,036,547) is respectfully traversed.

It is respectfully submitted that Belopolsky et al. does not cure the deficiencies of Guiterrez et al. with respect to the present claims. Belopolsky et al. nowhere describe directly grounding magnetic components to a ground plane of a shield for a modular jack, and do not

discuss EMI/RMI shielding concerns. Rather, Belopsolsky only addresses crosstalk issues between the signal contacts. Thus, it is respectfully submitted that Belopolsky et al. adds nothing to the teaching of Guiterrez et al. with respect to the instant claims.

Claims 8 and 13 are therefore submitted to be patentable over Guiterrez et al. in view of Belopolsky et al., and when the recitations of claims 11 and 17 are considered in combination with the recitations of claims 8 and 13, claims 11 and 17 are likewise submitted to be patentable over Guiterrez et al. in view of Belopolsky et al.

For the reasons set forth above, Applicants respectfully request that the Section 103 rejection of Claims 11 and 17 be withdrawn.

For the reasons set forth above, Applicants respectfully request that the Section 103 rejection of Claims 11 and 17 be withdrawn.

In view of the foregoing amendments and remarks, all the claims now active in this application are believed to be in condition for allowance. Reconsideration and favorable action is respectfully solicited.

Respectfully Submitted,

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